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Science Response 2014/002

Quebec Region

UPDATE OF MAIN INDICATORS OF THE STOCK STATUS OF ATLANTIC HALIBUT IN THE GULF OF ST. LAWRENCE (4RST) IN 2013

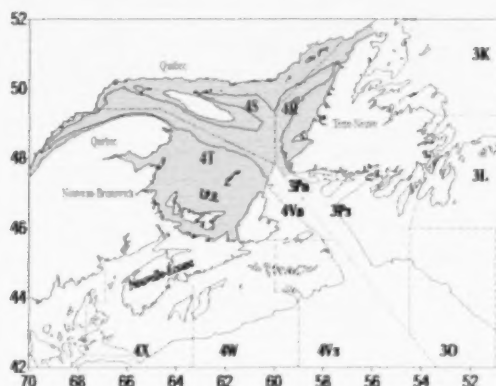
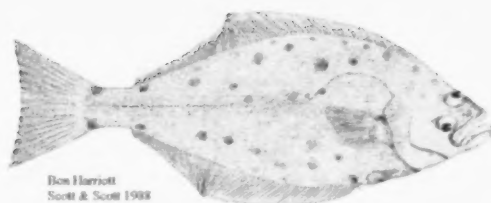


Figure 1. Map of the Gulf of St. Lawrence and neighboring regions showing NAFO divisions 4RST (shaded area).

Context

The stock assessment of Atlantic Halibut (*Hippoglossus hippoglossus*) in the Gulf of St. Lawrence (NAFO Divisions 4RST) is conducted every two years, with the most recent assessment completed in February 2013. In interim year, a summary review of the resource's main indicators is made in order to determine whether major changes in the stock status would warrant more in-depth study prior to the planned assessment in the winter of 2015. This update was prepared to provide Fisheries Management with an overview of the most recent stock status. In 2013, this stock has undergone a commercial fishery whose total allowable catch (TAC) was set at 864 t, the fishing season ending May 14, 2014.

This Science Response Report results from the Science Response Process of December 6, 2013 on Update of Stock Status Indicators for Cod (3Pn4RS) and Atlantic Halibut in the Gulf of St. Lawrence (4RST) in 2013.

Analysis

The stock status update of Atlantic Halibut in the Gulf of St. Lawrence is based on 2013 data from: 1) commercial landings (fixed and mobile gears); 2) summer scientific trawling surveys, carried out by Fisheries and Oceans Canada, in the northern (1990-2013) and the southern Gulf (1985-2013) (indices of distribution, abundance and biomass, population structure); and 3) mobile trawl survey conducted in the northern Gulf by the Sentinel program (1995-2013) (indices of distribution, abundance and biomass, population structure).

Landings

For the management cycle comprised between May 15 of the current year and May 14 of the following year, reported landings from commercial fisheries (fixed and mobile gear) for Atlantic Halibut in the Gulf of St. Lawrence reached 737 t for 2011 season and 722.5 t for 2012 season (Figure 2). Due to the quota conciliation, a management measure coming into force from the 2011 fishing season, the initial TAC of 720 t provided for each of these two seasons was respectively reduced to 636 t and 653 t. Therefore, landings during these two years have exceeded 10-15% authorized allowances.

For the 2013-14 fishing season, landings in early December 2013 totaled 763.7 t, or 94% of the authorized allocation of 811.9 t following the quota conciliation measure. Landings of the last three years are the highest recorded in the past 60 years.

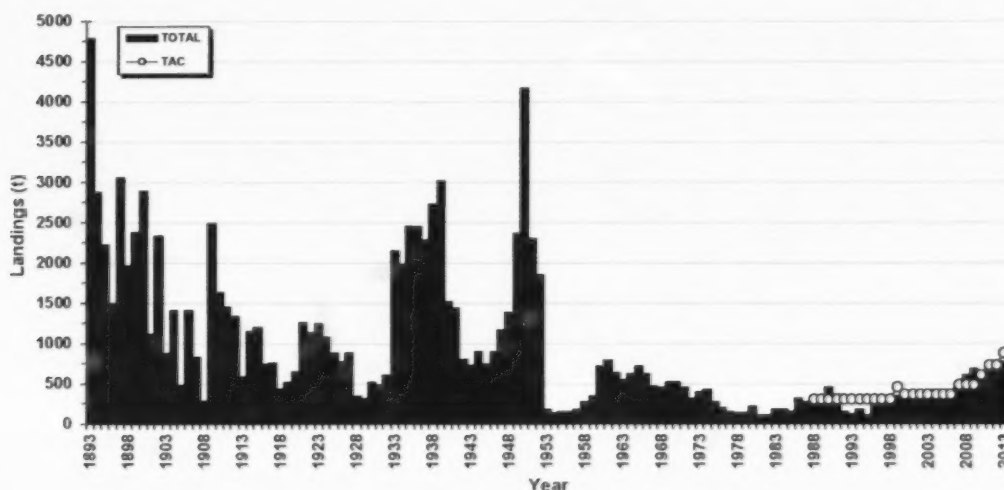


Figure 2. Atlantic Halibut annual landings (t) and total allowable catch (TAC) for NAFO Divisions 4RST. 2012 and 2013 data are preliminary.

Stock Status Indicators

DFO Bottom trawl research surveys

The distribution of Atlantic Halibut in the northern and the southern Gulf in August and September 2013 respectively was similar to that observed in 2012, catches concentrating along and in Esquiman, Anticosti and Laurentian channels, and on the periphery of the Magdalen basin. The values of distribution index (area of occupancy DWA0 and geographic concentration D95) in the northern Gulf are still among the highest in the 1990-2013 survey series. They have risen sharply in the southern Gulf in 2013, reaching the second highest in the 1985-2013 survey series.

Indices of abundance and biomass of trawl surveys in the northern and southern Gulf in 2013 remained relatively stable compared to the values observed in 2012 (Figures 3 and 4). The indices for the two surveys were maintained well above the average of each survey series.

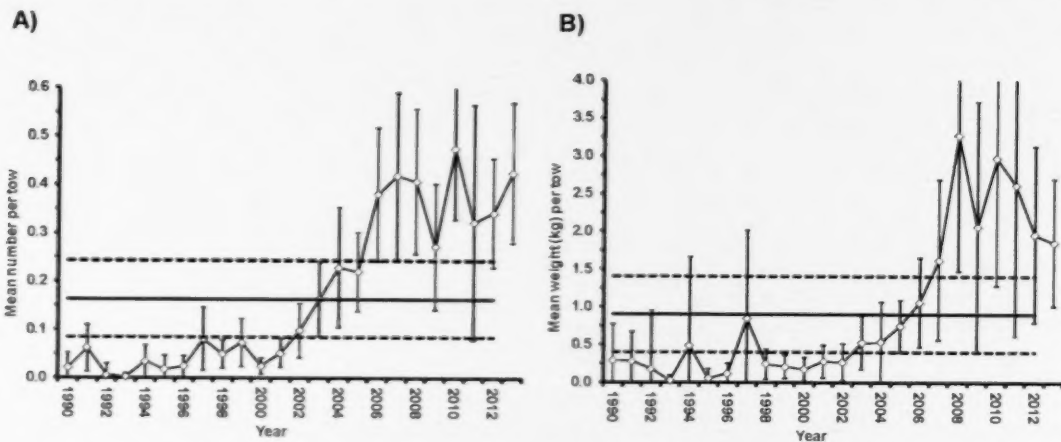


Figure 3. Estimated abundance (A) and biomass (B) indices for Atlantic Halibut based on the DFO research trawl survey in the northern Gulf. The error bars indicate the confidence interval of 95%. The solid line represents the series mean for all years except 2013 and the dashed lines ± 0.5 standard deviation.

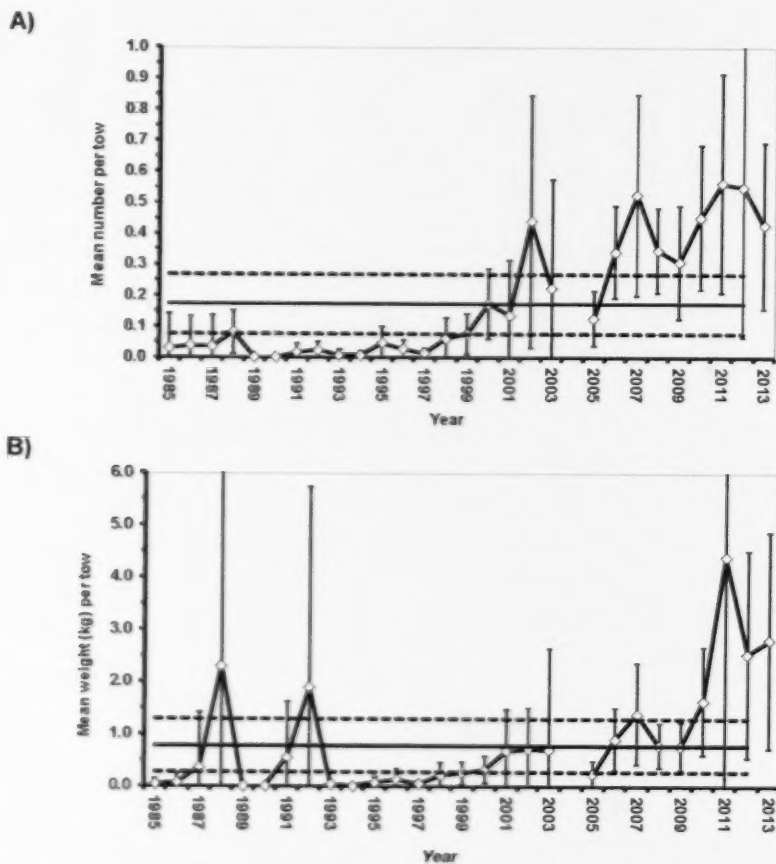


Figure 4. Estimated abundance (A) and biomass (B) indices for Atlantic Halibut based on the DFO research trawl survey in the southern Gulf. The error bars indicate the confidence interval of 95%. The solid line represents the series mean for all years except 2013 and the dashed lines ± 0.5 standard deviation.

The range of sizes of halibut caught during surveys in 2013 remained extensive, ranging between 20 and 130 cm in the northern Gulf and up to 170 cm in the southern Gulf. As for previous years, catches were mostly (~ 80 %) composed of pre-recruits (< 85 cm). The median size for the survey in the northern Gulf has declined below the 1990-2012 average median (Figure 5A) whereas for the southern Gulf survey, it remained stable at a higher level than the long-term period average median (Figure 5B).

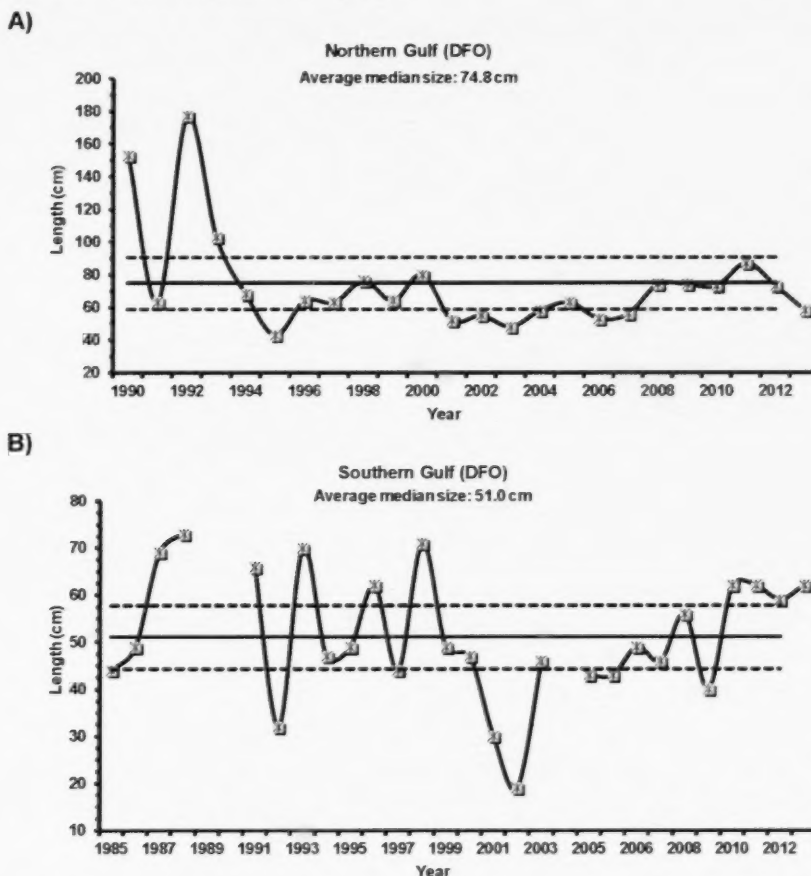


Figure 5. Median sizes of Atlantic Halibut captured in the DFO scientific trawl surveys in the northern Gulf (A) and the southern Gulf (B). The solid line represents the average median of the series for all years except 2013 and the dashed lines ± 0.5 standard deviation.

Mobile trawl survey by Sentinel program in the northern Gulf

The distribution of Atlantic Halibut in the mobile trawl survey by Sentinel program in 2013 was similar to that observed in the DFO survey in the northern Gulf, excluding the Estuary that is not covered by the Sentinel survey. The distribution indices (D95 and DWAO) decreased in 2013 but still remain high relative to all the values observed for the 1995-2013 series.

In 2013, the indices of abundance and biomass were slightly higher than in 2012 (Figure 6). The value of the abundance index remained in the average for the 1995-2012 period while the value of the biomass index remained at a higher level than the average for the same period.

The survey catches in 2013 were still represented by a wide range of sizes (27-124 cm) with a majority (83%) of non-commercial fish size (<85 cm). The median size observed was maintained close to the average for the 1995-2012 period (Figure 7).

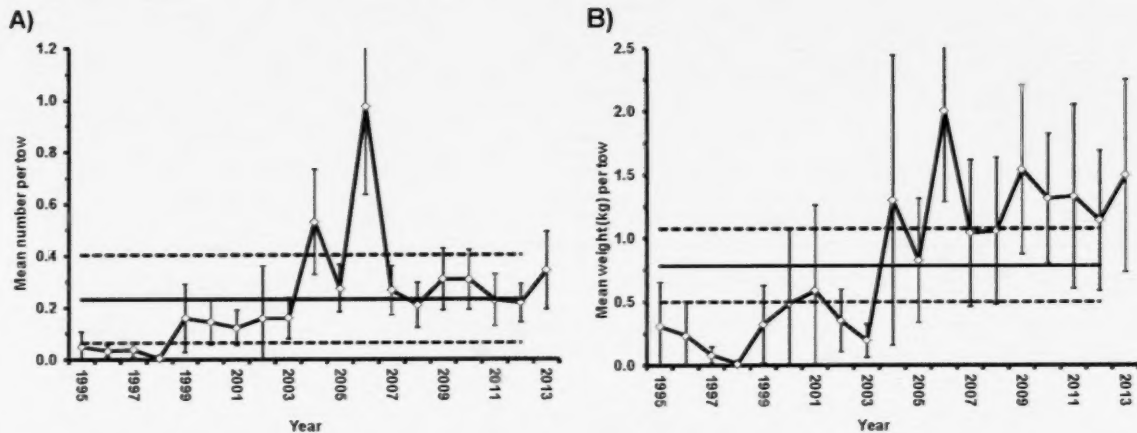


Figure 6. Estimated abundance (A) and biomass (B) indices for Atlantic Halibut based on the Sentinel mobile survey in the northern Gulf. The error bars indicate the confidence interval of 95 %. The solid line represents the series mean for all years except 2013 and the dashed lines ± 0.5 standard deviation.

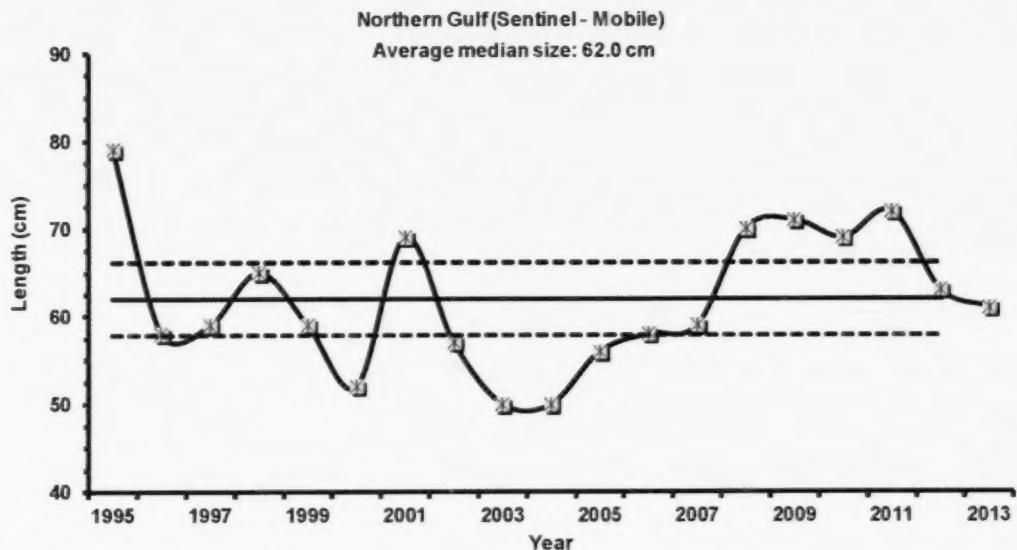


Figure 7. Median sizes of Atlantic Halibut captured in the Sentinel mobile survey in the northern Gulf. The solid line represents the average median of the series for all years except 2013 and the dashed lines ± 0.5 standard deviation.

Conclusions

No information on the fishery performance and the effort distribution was considered for this update. The only information analyzed from the fishery is landings. Reported landings to date are higher than those for the previous two years, while they are the highest in the last 60 years.

Indicators from DFO research trawl surveys in the northern and the southern Gulf, as well as those from the Sentinel mobile survey in the northern Gulf show in 2013:

- 1) abundance and biomass indices still well above the average of their respective series, with the exception of sentinel survey for which the value of the abundance index is comparable to the average of the series;
- 2) demographic structure always as extensive as previous years, and composition still has a strong majority (over 80 %) of pre-recruits (halibut <85 cm).

The update of the main indicators of the stock status of Atlantic Halibut in the Gulf shows no major changes compared to the assessment in February 2013. The latest scientific advice therefore remains valid for the next fishing season.

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Sources of information

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